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AUTHORITY

CSS memo dtd 22 Mar 2013

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SECURITY CLASSIFICATION: UNCLASSIFIED

INFORMAL REPORT

VEHICULAR COMPONENTS & MATERIALS DIVISION
MATERIALS BRANCH

TITLE: M151 TRANSMISSION CLUTCH HUB INSERT - P/N 7059129

REPORT NO. 11512(I) (Part 2 of 5 part report)

DATE: 29 FEBRUARY 1972

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US ARMY TANK-AUTOMOTIVE COMMAND
VEHICULAR COMPONENTS AND MATERIALS DIVISION
MATERIALS BRANCH

Report No. 11512(I) (Part 2 of 5)
Date: 29 February 1972

TITLE: M151 Transmission Clutch Hub Insert - P/N 7059129

OBJECT:

Metallurgical evaluation.

MATERIAL SUBMITTED:

Quantity 2, P/N 7059129, Manufacturer

A. M. General, Contract No. DAAE07-70-C-4861,

Submitted by AMSTA-QST.

TEST RESULTS:

1. Visual Examination:

One of the inserts had a dark heat color on one end and
considerable wear on the surface of the other end. The second
insert was broken at one end and also had heavy surface wear
near the other end.

2. Magnetic Particle Inspection:

<u>Sample No.</u>	<u>Crack Indications</u>	<u>Location</u>
<u>1</u>	<u>None</u>	<u></u>
<u>2</u>	<u>None</u>	<u></u>
<u></u>	<u></u>	<u></u>
<u></u>	<u></u>	<u></u>

3. Hardness Test: (See Table(s) --, --, --)

Scale Used: Rockwell 15N

Required: Surface Hardness R15N 89-91.5
 Core Hardness --
 Total Case Depth -- 0.005-0.008
 Hardness at Depth --

SAMPLE NO.	SURFACE HARDNESS	CORE HARDNESS	EFFECTIVE CASE DEPTH		HARDNESS	
			RC 50 @, INCH		AT	DEPTH
<u>1</u>	<u>R15N 90</u>	<u>R15N 57-58</u>				

4. Micro-Examination:

Microstructure, Required: None specified.

SAMPLE NO.	CASE	CORE	CASE DEPTH
			INCH
<u>1</u>	<u>Fine to medium</u>	<u>Low carbon</u>	<u>*.012</u>
	<u>acicular martensite</u>	<u>martensite.</u>	
	<u>and austenite.</u>		

*Total Case - Measured with Brinell glass.

5. Chemical Analysis: (See Inclosure 1, Column 2 (Insert))

Required Material: FS1010 to FS1020

SAMPLE NO.	MATERIAL
<u>1</u>	<u>Carburized low carbon</u>
	<u>steel - % manganese</u>
	<u>0.02% below lower limit</u>
	<u>(based on check analysis).</u>

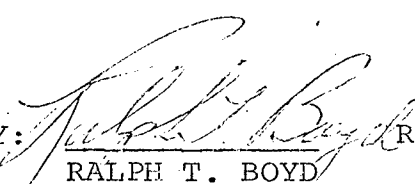
COMMENTS:

1. The insert examined failed to meet drawing requirements for case depth and chemistry. The depth of the case was found to exceed the specified upper limit by 0.004 of an inch and the manganese content of the steel was 0.02% below the lower limit for the range of steel specified.

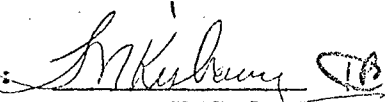
2. Such variations are not considered detrimental to the function of this component. The damage and failure of the inserts is attributed to mechanical rather than metallurgical factors. The heat discoloration and surface wear indicate that there is extensive metal to metal contact and possible overload which tend to reduce the structure integrity of the component.

3. All tests were conducted on equipment bearing current certification of calibration.


WRITTEN BY:


RALPH T. BOYD

REVIEWED BY:


F. N. KISBANY
C, Metals Func

APPROVED BY:


E. R. MACKIEWICZ
Actg C, Mat Br

CHEMICAL ANALYSIS

TO C, Metals Function
(AMSTA-RKMM)
ATTN: Mr. Boyd

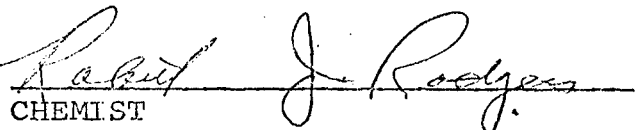
23 February 1972
Mr. Rodgers/mh/31238

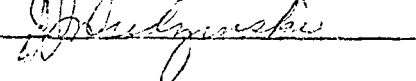
FROM Chemical and Spectrographic Unit

1. Sample: Insert Transmission Clutch, Pinion, Shaft,
RM 41342B pt 872

2. Results:

(Col. 1)	(Col. 2)	(Col. 3)	(Col. 4)
	INSERT	PINION	SHAFT
<u>ELEMENT</u>	<u>P/N 7039129</u>	<u>P/N 11660494</u>	<u>P/N 8754221</u>
Carbon	.66	.22	.51
Sulfur	.015	.021	.020
Phosphorous	.010	.008	.012
Manganese	.25	.88	.96
Silicon	.00	.22	.23
Chromium	.00	.37	1.05
Nickel	.026	.58	.027
Molybdenum	.00	.19	.18
Vanadium	Trace	Trace	Trace


CHEMIST

APPROVED 

Inclosure I



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
COMBAT SUPPORT & COMBAT SERVICE SUPPORT
6501 EAST 11 MILE ROAD
WARREN, MICHIGAN 48397-5000

SFAE-CSS

22 MAR 2013

MEMORANDUM FOR Defense Technical Information Center (DTIC-OQ), 8725 John J. Kingman Road, Fort Belvoir, VA 22060-6218

SUBJECT: Change of Classification Level to 4M151 Truck Documents

1. Reference Defense Technical Information Center (DTIC) Infosec "RE: M151A2 Documents retrieval and review" direction email of 14 December 2012.

2. In accordance with the above reference, please change the classification and distribution level for the following documents:

a. Document.

(1) The DTIC AD#: ADB271644

(2) Title: M151 Transmission Clutch Hub Insert – P/N 7059129

(3) Date of Document: 29 February 1972

(4) New Distribution/Classification: Distribution A. Approved for public release; distribution is unlimited.

(5) Reason for Change: This document has been reviewed for Operations Security (OPSEC) and has been deemed to contain no OPSEC concerns. The documents are for the M151 Truck that has not been in the military inventory since the early 1980s; the vehicle and associated documents are obsolete.

(6) Date of Change: Immediately

b. Document 2.

(1) The DTIC AD#: AD0474825

(2) Title: ENGINEER DESIGN TEST OF TRUCK, UTILITY, 1/4-TON, 4X4, M151 (RIDE AND HANDLING CHARACTERISTICS)

(3) Date of Document: 15 December 1965

SFAE-CSS

SUBJECT: Change of Classification Level to 4M151 Truck Documents

(4) New Distribution/Classification: Distribution A. Approved for public release; distribution is unlimited.

(5) Reason for Change: This document has been reviewed for OPSEC and has been deemed to contain no OPSEC concerns. The documents are for the M151 Truck that has not been in the military inventory since the early 1980s; the vehicle and associated documents are obsolete.

(6) Date of Change: Immediately

c. Document 3.

(1) The DTIC AD#: AD0857240

(2) Title: Product Improvement Test of Truck, Utility, 1/4-TON, 4X4, M151 Series with Modified Independent Rear Suspension System

(3) Date of Document: 27 June 1969

(4) New Distribution/Classification: Distribution A. Approved for public release; distribution is unlimited.

(5) Reason for Change: This document has been reviewed for OPSEC and has been deemed to contain no OPSEC concerns. The documents are for the M151 Truck that has not been in the military inventory since the early 1980s; the vehicle and associated documents are obsolete.

(6) Date of Change: Immediately

d. Document 4.

(1) The DTIC AD#: ADB273320

(2) Title: Bonded vs. Riveted Brake Lining Test

(3) Date of Document: 12 January 1977

(4) New Distribution/Classification: Distribution A. Approved for public release; distribution is unlimited.

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SUBJECT: Change of Classification Level to 4M151 Truck Documents

(5) Reason for Change: This document has been reviewed for OPSEC and has been deemed to contain no OPSEC concerns. The documents are for the M151 Truck that has not been in the military inventory since the early 1980s; the vehicle and associated documents are obsolete.

(6) Date of Change: Immediately

e. Document 5.

(1) The DTIC AD#: AD0810372

(2) Title: Product Improvement Test of Truck, Utility, 1/4-TON, 4X4, M151 Modified with Solid Rear Axle

(3) Date of Document: March 1967

(4) New Distribution/Classification: Distribution A. Approved for public release; distribution is unlimited.

(5) Reason for Change: This document has been reviewed for OPSEC and has been deemed to contain no OPSEC concerns. The documents are for the M151 Truck that has not been in the military inventory since the early 1980s; the vehicle and associated documents are obsolete.

(6) Date of Change: Immediately

f. Document 6.

(1) The DTIC AD#: ADB271624

(2) Title: Transmission Cluster Gear (M151 Vehicle)

(3) Date of Document: 06 March 1972

(4) New Distribution/Classification: Distribution A. Approved for public release; distribution is unlimited.

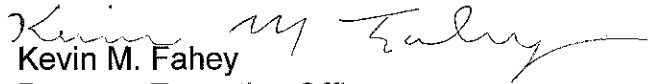
(5) Reason for Change: This document has been reviewed for OPSEC and has been deemed to contain no OPSEC concerns. The documents are for the M151 Truck that has not been in the military inventory since the early 1980s; the vehicle and associated documents are obsolete.

SFAE-CSS

SUBJECT: Change of Classification Level to 4M151 Truck Documents

(6) Date of Change: Immediately

3. The Point of Contact for this action is Robert Anick, Sr, email:
robert.d.anick.civ@mail.mil or COM (586) 282-8448.


Kevin M. Fahey
Program Executive Officer,
Combat Support & Combat Service Support